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STATISTICAL BULLETIN

Metropolitan Life Insurance Co.

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SMALLPOX RECORD OF 1923 AND EARLY INDICATIONS FOR 1924.

The record for smallpox in 1923 is encouraging in a number of respects. The total number of cases in the United States and Canada declined somewhat from the preceding year, but more important was the very large decline in the number of deaths. The smallpox that prevailed in the United States and Canada was of a milder type than that of 1922.

The table below shows the situation in both the United States and Canada since 1916:

Number of Smallpox Cases and Deaths in the United States and in Canada, 1916 to 1923.

AREA	CASES	DEATHS	DEATHS PER 100 CASES
United States			
1923 (42 States and Dist. of Columbia)	25,943	163	.6
1922 (42 States and Dist. of Columbia)	27,928	791	2.8
1921 (42 States and Dist. of Columbia)	91,335	657	.7
1920 (47 States and Dist. of Columbia)	108,835	514	.5
1919 (43 States and Dist. of Columbia)	58,348	328	.6
1918 (39 States and Dist. of Columbia)	76,831	396	.5
1917 (38 States and Dist. of Columbia)	47,507	313	.7
1916 (30 States and Dist. of Columbia)	15,532	82	.5
Canada			
1923 (8 Provinces)	1,383	3	.2
1922 (8 Provinces)	1,950	6	.3
1921 (8 Provinces)	6,713	37	.6
1920 (8 Provinces)	7,579	53	.7
1919 (6 Provinces)	5,635	25	.4
1918 (4 Provinces)	1,295	9	.7
1917 (4 Provinces)	605	7	1.2
1916 (3 Provinces)	39	5	12.8

The favorable situation of 1923, as a whole, must not result in neglecting the serious condition in a number of areas. The States of Michigan, North Carolina and California had more than 2,000 cases each during the year and Indiana had very close to that number.

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The State of New Mexico, although it had a small number of cases, only 91, recorded 10 deaths, which indicates a virulent type of the disease. Otherwise, the fatality rate in the states was low.

There are already indications that in the new year there may be an increase in the prevalence of smallpox. During the first two months of 1924 the situation has again become serious in a number of places. The disease has been very prevalent in Michigan, California and Georgia. One case in Windsor, Ontario, was traced to Detroit, where more cases were uncovered. Since then, five deaths have occurred in Windsor and three in Detroit. The Detroit Health Department and the United States Public Health Service are vaccinating about 20,000 persons a week in an endeavor to prevent

Smallpox Cases and Deaths in the United States and in Canada, 1921 to 1923.

AREA	CASES			DEATHS			DEATHS PER 100 CASES		
	1923	1922	1921	1923	1922	1921	1923	1922	1921
United States and Canada	27,326	29,878	98,048	166	797	694	.6	2.7	.7
United States (42 States and D. C.)	25,943	27,928	91,335	163	791	657	.6	2.8	.7
Canada (8 Provinces)	1,383	1,950	6,713	3	6	37	.2	.3	.6
STATES*									
Maine	118	35	96	2	.....	.....	1.7	.....	.....
New Hampshire	39	1	19	.....	.....	.....	.....	.....	.....
Vermont	255	14	177	2	.....	1	.8	.....	.6
New York	392	255	631	.....	1	1	.....	.4	.2
New Jersey	30	18	255	.....	.....	.....	.....	.....	.....
Pennsylvania	183	85	212	.....	5	1	.....	5.9	.5
Indiana	1,910	1,075	4,809	4	7	21	.2	.7	.4
Michigan	2,311	1,231	4,537	13	20	12	.6	1.6	.3
Wisconsin	1,338	1,790	5,216	1	2	17	.1	.1	.3
Minnesota	1,950	2,215	9,375	2	8	25	.1	.4	.3
Maryland	25	17	214	.....	1	.....	.....	5.9	.....
Virginia	541	511	1,873	1	.....	7	.2	.....	.4
North Carolina	3,352	1,409	2,513	13	7	21	.4	.5	.8
South Carolina	1,500	342	1,084	2	5	9	.1	1.5	.8
Arkansas	315	173	481	.....	1	1	.....	.6	.2
Louisiana	692	645	1,421	4	2	55	.6	.3	3.9
Montana	732	636	1,466	3	2	4	.4	.3	.3
New Mexico	91	53	110	10	1	1	11.0	1.9	.9
Washington	1,623	1,595	4,441	10	1	10	.6	.1	.2
California	2,029	2,129	5,581	1	20	21	.05	.9	.4
PROVINCES*									
British Columbia	339	30	108	2	1	.....	.6	3.3	.....
Manitoba	445	173	205	.....	.....	.....	.....	.....	.....

*States and Provinces specified only where 1,000 or more cases were reported in 1923, or where there was a significant increase in case reports during that year. Grand totals for United States and Canada include all State and Provincial reports where record was complete for the three years 1921 to 1923.

further spread of the disease. The Michigan State Department of Health is carrying on vaccination work in neighboring cities.

Smallpox in California does not seem to be abating this year. There have been more cases in the state during the first two months of 1924 (2,878) than occurred during all of 1923 (2,029). Of the 2,878 cases in the state during January and February of this year, 2,567 occurred in Los Angeles County. In several towns of the county, where the disease has been unusually prevalent, health departments have provided facilities for free vaccination.

The disease has been unusually prevalent in East Tennessee also. Chattanooga reported 84 cases between January 1st and February 23d, eleven more than for the whole year 1923. Knoxville reported 191 cases up to February 27th.

These brief comments on the experience for 1924 so far show that no optimistic attitude can be assumed toward smallpox until the enormous number of susceptibles is reduced by nation-wide acceptance of the principle of vaccination in accordance with the practices approved by the United States Public Health Service and by the constituted health authorities of the States and lesser civil divisions. A sense of security cannot and should not be created by what seems to be a temporary let-up in the virulence rate for 1923.

DEATHRATE AMONG THE INDUSTRIAL POPULATIONS OF AMERICAN STATES AND CANADIAN PROVINCES.

For a number of years, the Metropolitan Life Insurance Company has published in these BULLETINS, annual, quarterly and monthly mortality statistics of its Industrial policyholders. These statistics have been well received by the press and the public as the earliest indication of current health conditions in the general populations of the United States and Canada. Heretofore, these figures have been prepared, however, for the large group of policyholders as a whole, without regard to their geographical location. We are now in a position to present similar statistics on current health conditions for the individual American states and the provinces of Canada. These, we hope, will be found useful by health officers, physicians, the press and the public generally. The following discussion and table relate to the mortality from all causes combined. In future BULLETINS we shall present similar tables and analyses for each of the more important causes of death.

It should be remembered that the Industrial policyholders of this Company, including men, women and children, live almost

altogether in the cities and that in such localities they compose practically one-quarter of the entire wage-earning population. In some states this proportion is even higher; but in all they form a sufficiently large sample of the whole to represent fairly accurately the conditions which prevail among urban dwellers.

The lowest deathrates in the Industrial populations of the two countries are found in the Western Provinces of Canada where the rate is 4.7 per 1,000 insured. Each one of the four provinces shows remarkably favorable figures reflecting the low mortality of a new and prosperous population.

The next lowest deathrates are those for the Pacific Coast States, namely, 6.9 per 1,000. The figures for Washington and Oregon are very much like those for the Western Provinces and for the same reasons. The premier position of these two areas in the insurance figures reflects the well-known facts in the published mortality data of their total populations.

The next group in order is the West North Central States where the rate for white lives is 7 per 1,000. Two of these states, Nebraska and Minnesota, show remarkably low figures comparing very favorably with those of the Canadian Provinces and the Pacific Coast States already mentioned.

But for Colorado, with a relatively high rate of mortality, the Mountain States, which rank next in order, would show even more favorable conditions. Three of the states, Montana, Idaho and Utah, present some of the lowest death rates in the entire experience. The situation in Colorado reflects, of course, the concentration of a large number of persons who have located there for the recovery of their health.

Like conditions prevail in the East North Central States, and in the New England States, which rank next in order. The rates for the individual states vary slightly above and below 7 per 1,000 for white persons. Rhode Island shows the highest rate in its group. Again, the arrangement among the states reflects their relative position in the mortality of the country as a whole.

The highest rates are found in the Middle Atlantic States, the South Atlantic States and the East and West South Central States—in other words, in the areas along the Eastern Seaboard and in the Southern Tier. The maximum, 10.6, was recorded in South Carolina, but the figures, generally, run slightly above and below 9 per 1,000.

Deathrates per 1,000 Persons Exposed. All Causes of Death, By Geographic Division, State and Province. Metropolitan Life Insurance Company, Industrial Department, 1923. (Excluding Infants Under One Year of Age.)

Geographic Division	Rate per 1,000	
	White	Colored
Total Company	8.2	14.5
United States	8.2	14.3
New England	7.7	12.0
Maine	7.4	*
New Hampshire	7.5	*
Vermont	7.2	*
Massachusetts	7.6	12.0
Rhode Island	8.5	*
Connecticut	7.6	13.1
Middle Atlantic	9.0	13.5
New York	8.8	14.1
New Jersey	8.7	13.5
Pennsylvania	9.5	13.0
East North Central	7.4	12.6
Ohio	7.3	14.7
Indiana	8.0	12.3
Illinois	7.2	11.4
Michigan	8.0	16.7
Wisconsin	6.4	14.8
West North Central	7.0	13.3
Minnesota	6.7	16.6
Iowa	7.0	10.3
Missouri	7.0	14.2
Nebraska	5.7	11.8
Kansas	7.3	11.7
South Atlantic	9.0	17.4
Delaware	7.5	10.4
Maryland	9.8	19.5
District of Columbia	8.1	15.5
Virginia	8.9	17.3
West Virginia	8.2	14.0
North Carolina	8.7	19.6
South Atlantic (Cont.)		
South Carolina	10.6	22.6
Georgia	8.6	17.5
Florida	9.5	18.9
East South Central	8.9	15.9
Kentucky	8.8	15.6
Tennessee	9.2	15.7
Alabama	8.6	18.1
West South Central	9.0	15.8
Arkansas	7.7	18.7
Louisiana	9.0	14.0
Oklahoma	7.2	15.4
Mountain	7.3	17.5
Montana	5.4	17.2
Idaho	5.0	12.0
Colorado	11.3	14.2
Utah	4.8	*
Pacific	6.9	10.9
Washington	5.2	11.7
Oregon	5.1	13.7
California	7.5	10.6
Canada	7.5	*
Eastern Provinces	7.8	*
Nova Scotia	8.3	*
New Brunswick	7.2	*
Quebec	9.0	*
Ontario	6.2	*
Western Provinces	4.7	*
Manitoba	4.6	*
Saskatchewan	5.1	*
Alberta	4.9	*
British Columbia	4.6	*

*Deathrate not calculated on account of small number of colored policyholders

Comparison of the relative position of the states in the above table shows that insurance death rates, by and large, are a reflex of those that prevail in the entire population. Pennsylvania, South Carolina, Tennessee, Colorado and California, each of which shows the highest rate among the insured in its own geographical

area, also exhibits the maximum mortality in the general urban population. There are several exceptions, however, such as Maine, New Hampshire and Vermont, where Industrial insurance death rates are low but general population mortality is relatively high. This is explained by the high average age of the general population with its relatively high mortality. Again, in the Middle Atlantic States, the general population deathrates are not as high as would be expected on the basis of those for the insured.

The above comparisons have been limited to white persons. It is possible to make an equally instructive comparison among colored persons of whom two million are insured in the Company. Leaving out of consideration those areas where there are few colored persons and concentrating on those where the colored form a considerable part of the population, we find that the lowest rates for colored people prevail in the New England and in the northern group of states. The figures rise to their maximum as we go South. The highest mortality for colored people is found in South Carolina, where the rate is 22.6. Not all of the Southern States show equally high figures. Most of those in the East and West South Central group show lower mortality. In the last few years there has been a tendency toward a slight increase in the deathrate of colored people in the South. This calls for careful study in view of the improvement in colored mortality within the last decade in the country as a whole.

MENTAL DISEASE AS A FACTOR IN SUICIDE.

The mortality data of the Metropolitan's Industrial Department strongly support the belief that mental derangement is a most important factor in causing suicide. Among 1,081 suicides recorded during 1923, mental disease was definitely specified as a contributory factor in 212 cases, or in one case in every five. It must be realized that this is a minimal estimate; it included only those cases where, from the decedent's history, as gathered from the family or from the clinical record, a diagnosis of mental disease could be made. The usual procedure on the part of coroners and medical examiners in certifying suicide deaths is not conducive to an analytical statement of the cause of the suicide in each case. Whenever sympathetic and thorough inquiry is made, illuminating facts are often disclosed which increase the number of cases where mental disease should be recorded.

In certain countries, the clinical record of suicide is supplemented by autopsy findings and these lead in many cases to a diagnosis of organic mental or nervous disease which could not have been made from the personal history alone. The collection of more adequate data on the pathological conditions present at the time of the suicide will promote a better understanding between the mental hygiene and the general public health movements. For, if suicides are to be controlled more effectively, the underlying causes must be better understood. Certain premonitory mental states in their relationship to suicide causation have just begun to be studied. The 212 mental cases in our 1923 suicide experience were not intended to serve as an accurate measure of the importance of mental disease in suicide causation; but rather to show that an opportunity and a need exist for further inquiry into self-destruction.

MORTALITY OF INSURED INFANTS DURING 1923.

The Metropolitan Life Insurance Company decided during the Spring of 1923 to effect insurances on the lives of infants under one year of age. In taking this step, the Company was actuated to a great extent by the possibility of including within its membership a group of the population which, according to public health evidences, could be advantageously affected by the Company's life conservation programme. During 1923, approximately 519,000 policies were issued on the lives of children under one year of age. The facts on the mortality of this group of children are now available. The deathrate was extraordinarily low, considering the fact that these children were drawn from the wage-earning group of the population. There were 34.5 deaths per 1,000 years of life exposed to risk under one year of age. With due regard to month of age, the death rate among these children was lower than that prevailing in the general population at all infant ages up to nine months. For the age division nine months and under one year, the infant mortality rate among insured children was approximately the same as that which has prevailed among babies in the Birth Registration Area of the United States.

In the table on page 8 we show the number of deaths per 1,000 years exposed to risk under one year of age according to color, sex and age.

Deathrates per 1,000 Lives Exposed Under One Year of Age.

Metropolitan Life Insurance Company, Industrial Department, 1923, and United States Birth Registration Area, 1921. By Color, Sex and Age Divisions.

AGE PERIOD; AREA	TOTAL	WHITE		COLORED	
		Males	Females	Males	Females
ALL AGES EXPOSED UNDER 1 YEAR:					
M. L. I. Co. Ind'l (1923).....	34.5	36.3	28.8	62.1	54.0
U. S. B. R. A. (1921).....	80.3	85.7	67.5	131.1	109.9
UNDER 1 WEEK:					
M. L. I. Co. Ind'l (1923).....	213.2	292.3	131.1	333.3	.....
U. S. B. R. A. (1921).....	1514.7	1688.3	1268.2	2131.7	1584.9
1 WEEK AND UNDER 1 MONTH:					
M. L. I. Co. Ind'l (1923).....	51.1	64.8	33.9	73.3	62.5
U. S. B. R. A. (1921).....	178.6	188.3	152.9	282.1	246.9
1 MONTH AND UNDER 3 MOS.:					
M. L. I. Co. Ind'l (1923).....	46.5	50.9	38.8	76.6	56.4
U. S. B. R. A. (1921).....	70.4	75.4	58.2	116.8	102.5
3 MOS. AND UNDER 6 MOS.:					
M. L. I. Co. Ind'l (1923).....	38.9	41.4	31.5	73.1	62.3
U. S. B. R. A. (1921).....	46.3	47.8	38.8	83.7	74.8
6 MOS. AND UNDER 9 MOS.:					
M. L. I. Co. Ind'l (1923).....	28.9	29.5	24.3	50.4	53.1
U. S. B. R. A. (1921).....	33.2	33.6	28.0	64.6	56.6
9 MOS. AND UNDER 1 YEAR:					
M. L. I. Co. Ind'l (1923).....	26.0	25.0	23.7	51.6	42.9
U. S. B. R. A. (1921).....	25.9	25.4	23.0	46.2	44.3

It should be remembered that these insurances of young children were effected only on healthy lives and that the mortality experience, therefore, does not include the great mass of children born with congenital defects or suffering from obvious developmental defects or from acute diseases and conditions at the time of insurance.

At the present time, there are no data available which could be used to test the effect of the Company's nursing and educational work for the welfare of insured infants during 1923. Records similar to the above will be kept from year to year and an endeavor will be made to show the life-saving possibilities of the educational work done by the Company's nurses and agents for this important

group of the population. Infant insurance should endeavor not only to cover the economic aspects of the death risk among such children, but also to apply, so far as possible, the practices of modern public health nursing in the direction of life-saving. Instruction of mothers in infant hygiene and bedside nursing of acutely sick babies, have demonstrated in general population groups a remarkable capacity for life-saving, and returns of this kind are confidently expected in this new form of insurance service.

HEALTH RECORD FOR FEBRUARY, 1924.

The deathrate for February, 1924 (9.9 per 1,000) is the lowest ever recorded for that month among Metropolitan Industrial policyholders. While the above figure is identical with that registered for February, 1921, the fact must be considered that infant lives were not insured at that time. It is obvious that if the relatively high mortality in this class of the business were left out of consideration this year, the rate for the month would be materially lower than the 1921 February figure.

The usual seasonal rise appears, as compared with January, but the health situation not only for all causes combined, but for each of the numerically important causes (save accidents), is the most hopeful we have ever experienced at this time of the year. Comparison of the month's tuberculosis deathrate with that of February, 1923, shows a drop of 13 per cent.; organic heart disease and pneumonia rates declined 22 per cent., and those for cerebral hemorrhage and Bright's disease 11 per cent. and 14 per cent. respectively. Mortality from influenza in February was approximately only one-fourth last year's figure for the same month. At this period in 1923, it will be recalled, we were experiencing the peak of an influenza outbreak.

The outlook for lower mortality from diabetes mellitus in 1924 continues favorable. In the February BULLETIN, we quoted a January deathrate of 17.2 per 100,000, as compared with 20.3 for January, 1923. The decline in February was even more pronounced, with a deathrate of 15.2 as compared with 22.3 for the same month of 1923.

The accident mortality showed the usual decline, as compared with January, and there may be some encouragement in the fact that no increase was registered over February of last year. A very slight decrease was registered also for automobile fatalities, as compared with the same month of 1923.

The general deathrate for the cities of the United States during February was 14.0 per 1,000 estimated population. This is slightly higher than the mortality during the previous month (13.5), but shows a material decline from the figure for February, 1923, which was 17.4. Increased case-prevalence, as compared with January, was shown for influenza, measles, scarlet fever, smallpox, typhoid fever and whooping cough; fewer cases of diphtheria were reported. Comparison with February, 1923, shows higher morbidity from measles, scarlet fever and smallpox, with fewer cases of diphtheria, typhoid fever and whooping cough, and a very considerable decline in the prevalence of influenza.

The diphtheria situation, in general, is particularly favorable. One exception is California, in which state three hundred more cases were reported during the first three weeks of February than for the corresponding weeks of 1923.

There appears to be no evidence of epidemic influenza.

Measles, however, is being reported in larger numbers than during the early months of last year. In Kansas, for example, 2,901 cases were reported for the first three weeks of February, as compared with 218 for the same weeks of 1923. In Nebraska, case-reports numbered 1,398 as compared with 38; and in Alabama, 1,780 as compared with 183. There was pronounced increased prevalence of this disease over the January record. Scarlet fever cases also appear to be very numerous in certain parts of the country. In Massachusetts, for example, 1,522 were reported, as compared with 935 during February of last year. There was an outbreak in the western part of Seneca County, Ohio, with numerous cases reported also in Wood and Sandusky Counties, where several schools were closed.

Smallpox threatens to become a problem in some of the states. We have commented on this situation in another page of the BULLETIN.

Among the outstanding health activities of the month may be mentioned the plans for a three-year investigation to better the condition of rural children in Iowa. This will be conducted by the State Child Welfare Research Station at the University of Iowa, with the financial aid of the Laura Spelman Rockefeller Memorial Fund.

The Philadelphia Health Department has planned to immunize every child in the public and parochial schools against scarlet fever, measles and diphtheria. In Mahoning and Trumbull Counties

Ohio, more than 40,000 injections with Schick testing and immunization material were made in February.

The table below shows the mortality among Industrial policyholders for February, 1924; January, 1924; February, 1923 and for the year 1923.

METROPOLITAN LIFE INSURANCE COMPANY.

Deathrates† Per 100,000 for Principal Causes, Premium-paying Business in Industrial Department. (Annual Basis.)

MONTHS OF JANUARY AND FEBRUARY, 1924, AND OF FEBRUARY, 1923.

CAUSES OF DEATH	RATE PER 100,000 LIVES EXPOSED†			
	Feb., 1924	Jan., 1924	Feb., 1923	Year 1923*
TOTAL—ALL CAUSES	991.2	971.0	1166.6	923.9
Typhoid fever	2.5	2.9	2.8	5.1
Measles	9.3	8.5	10.8	9.4
Scarlet fever	6.4	6.8	4.5	4.4
Whooping cough	7.8	5.7	6.5	7.4
Diphtheria	16.8	19.9	17.6	15.5
Influenza	25.3	16.1	91.6	30.2
Tuberculosis (all forms)	105.0	107.0	121.0	109.6
Tuberculosis of resp'y system	94.5	97.4	111.5	99.2
Cancer	68.5	72.3	71.1	71.5
Diabetes mellitus	15.2	17.2	22.3	15.9
Cerebral hemorrhage	66.1	65.9	74.5	61.0
Organic diseases of heart	134.0	135.9	171.9	126.7
Pneumonia (all forms)	132.9	122.6	170.7	83.5
Other respiratory diseases	18.0	15.7	22.7	13.9
Diarrhea and enteritis	17.1	17.8	6.0	28.1
Bright's disease (chronic nephritis)	73.5	71.4	85.3	68.5
Puerperal state	18.9	16.8	19.3	17.6
Suicides	6.1	5.5	5.5	7.3
Homicides	5.6	5.6	5.2	7.2
Other external causes (excluding suicides and homicides)	53.0	62.3	52.8	62.7
Traumatism by automobile	9.2	12.9	9.5	15.2
All other causes	209.3	195.4	204.8	178.6

*Based on provisional estimate of lives exposed to risk in 1923.

†With the exception of February, 1923, figures include mortality of infants under one year of age.

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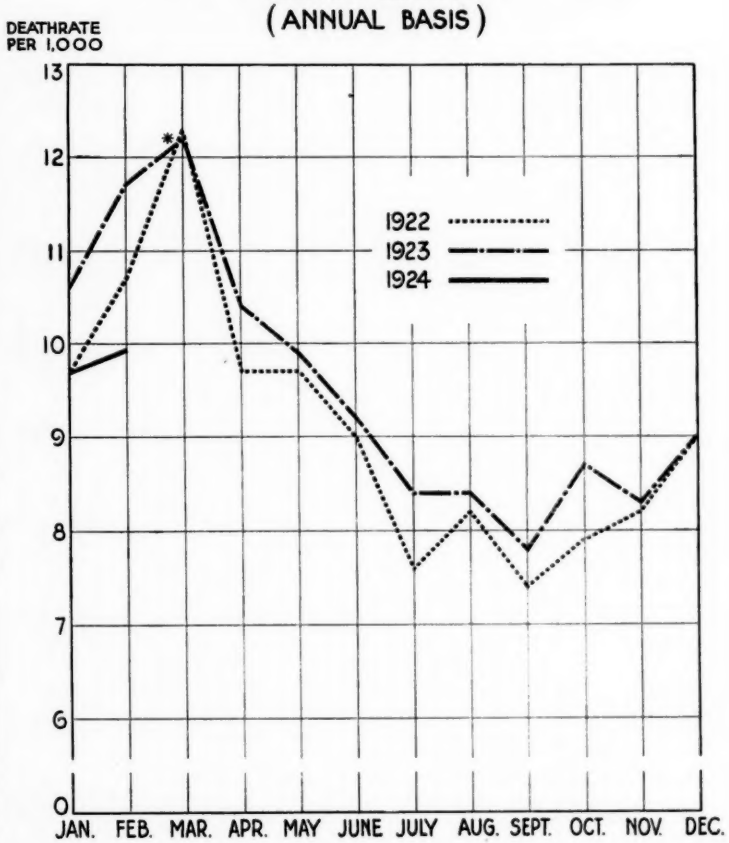
DEATHRATE PER 1,000 *in* SPECIFIED MONTHS *of* 1922, 1923, 1924

METROPOLITAN LIFE INSURANCE COMPANY
INDUSTRIAL DEPARTMENT
(ANNUAL BASIS)



	1922	1923	1924
JAN.	9.7	10.6	9.7
FEB.	10.7	11.7	9.9
MAR.	12.3	12.2	
APR.	9.7	10.4	
MAY	9.7	9.9	
JUNE	9.0	9.2	

	1922	1923	1924
JULY	7.6	8.4	
AUG.	8.2	8.4	
SEPT.	7.4	7.8	
OCT.	7.9	8.7	
NOV.	8.2	8.3	
DEC.	9.0	9.0	

* Beginning with March, 1923, figures include mortality of infants under one year of age.

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